

REMARKS

The present Amendment is submitted in response to the Office Action mailed in this case on July 11, 2011.

The non-final Office Action rejects claims 1-5 and 9-14 under §103(a) over US Patent No. 4,787,136 to Majic (Majic) in view of US Patent Appln. Pub. No. 2004/0050566 to Totsu (Totsu) and rejects claims 6-8 under §103(a) further in view of US Patent Appln. Pub. No. 2003/0173096 to Setton, et al. (Setton).

To support the rejection of claims 1 and 15, the Examiner asserts that Majic discloses producing a screw connection by a cutout screwdriver 10 that terminates screw driving operation when a predetermined torque is achieved (col. 1, lines 49-53), and data relating to the operation are detected (E2; Fig. 2) and evaluated by an evaluation circuit 35 (Fig. 2) integrated ("cooperates with" = "integrated") in screwdriver (10) and transmitted to external monitoring/control unit 15 (Fig. 1; external control unit 15 is shown in detail in Fig. 2 as including comparator 38; col. 1, lines 53-61; col. 8, lines 16-24)

The Examiner further asserts that Majic does not disclose deactivating when a number of idle screwdriver actuations exceed a predetermined limit value per screw driving cycle, but Totsu does at par. [0027] and that it would have been obvious to modify Majic by adding a signal to indicate when a predetermined torque has been reached.

Applicants respectfully disagree but nevertheless amend claims 1 and 15 formally in order to more clearly highlight and set out the inventive features.

For example, independent claim 1 as amended now recites a method for producing a screw connection by a cordless cutout screwdriver (10) comprising an evaluation unit (18), the cordless cutout screwdriver (10) terminating a screw driving operation when a predetermined torque is achieved.

The method includes detecting and evaluating data relating to the operation using the evaluation circuit (18), transmitting the data to an external monitoring unit (20) and deactivating the cutout screwdriver (10) when a number of idle screwdriver actuations exceeds a predetermined limit value per screw driving cycle.

In the invention as claimed, the evaluation unit (18) is part of the cordless cutout screwdriver (10), where the external monitoring unit (20) is separated from the cordless cutout screwdriver (10).

In Majic, the screwdriver tool 10 is connected by cable 12 to a control unit 15. Control unit 15, which is an external monitoring unit, comprises a comparator or evaluation circuit 35.

As evaluation circuit 35 is part of control unit 15 (i.e., integrated within control unit 15) and control unit 15 is connected to the screwdriver tool 10 by cable 12, neither control unit 15 nor evaluation circuit 35 can be said to be integrated within the screwdriver tool 10. It follows that evaluation circuit 35 does not transmit to external monitoring/control circuit 15.

Applicants' Fig. 1, as distinguished, shows the claimed evaluation unit (18) transmitting/receiving to/from claimed monitoring unit (20).

Moreover, applicants do not disagree that Totsu discloses sending a deactivation signal to the cutout screwdriver once a predetermined torque is reached (par. [0027]). Each of Majic, Totsu and the invention as claimed deactivate when a particular torque is reached. But neither Majic nor Totsu teach or suggest the additional feature of deactivating when a number of idle screwdriver actuations exceeds a predetermined limit value per screw driving cycle, which limitation is included in claims 1 and 15.

While the Examiner asserts that Totsu at par. [0027] teaches that "the deactivation signal is sent when the predetermined torque is reached such that the screwdriver actuates but no longer drives the screw and is therefore idle," applicants further respectfully disagree.

Totsu at par. [0027] describes that torque setting and automatic stopping means [18] that detects the load torque that occurs in the aforementioned rotary tool [14] during work such as screw tightening and stops the driving when the load torque reaches a pre-set value, i.e., deactivates when a particular torque is reached.

Nowhere does Totsu refer to "idle screwdriver actuation," or monitoring to detect when "a number of idle screwdriver actuations exceeds ..." as claimed.

For at least these reasons, modifying Majic as taught by Totsu would not realize the invention as claimed. Applicants respectfully assert, therefore, that claims 1-5 and 9-14 are not obvious over Majic in view of Totsu and request withdrawal of the rejections.

In the rejection of claims 6 and 8 over Majic in view of Totsu further in view of Setton under §103(a), the Examiner suggests (with respect to claim 6) that Setton discloses that the evaluation circuit detects the number of screw driving operations per screw driving cycle.

Applicants respectfully disagree. Setton at par. [0024] discloses that torque is commensurate with drive current and at par. [0027] discloses that the torque, or applied current, is modified as a function of a count of turns detected through a single screw driving operation. Nowhere does Setton disclose counting screwdriver actuations, or deactivating when a count of screwdriver activations exceeds a predetermined limit value, still less a predetermined limit value per screw driving cycle, as claimed.

While the Examiner asserts with respect to claim 8 that Setton discloses detecting current consumption, applicants further disagree as Setton at par. [0031] discloses that an alarm sounds when a comparator determines that the current drawn exceeds a limit.

Perhaps as importantly, however, Setton fails to overcome the shortcomings of Majic in view of Totsu, as set forth above in response to the rejection of claim 1. It follows that claims 6 and 8 are patentable under §103(a) over Majic and Totsu further in view of Setton and applicants respectfully request withdrawal of the rejections.

In the rejection of claim 7 over Majic and Totsu further in view of Bitzer, the Examiner suggests that Bitzer teaches an evaluation circuit that detects the duration of a screw driving procedure.

Applicants respectfully disagree, however, as Bitzer at col. 1, lines 37-44, and at col. 2, lines 8-10, merely discloses counters that begin counting after a predetermined torque is reached. Such operation could not be used to measure the entire duration of a screw driving operation/procedure, as claimed.

Perhaps as importantly, however, Bitzer fails to overcome the shortcomings of Majic in view of Totsu, as set forth above in response to the rejection of claim 1. It follows that claim 7 is patentable under §103(a) over Majic and Totsu further in view of Bitzer and applicants respectfully request withdrawal of the rejections.

Applicants also take this opportunity to add new claims 16 and 17 for examination. New claim 16 depends from claim 15, further limiting that the evaluation circuit (18) detects the number of screw driving operations per screw driving cycle.

New claim 17 sets forth a method for producing a screw connection by a cordless cutout screwdriver (10) comprising an evaluation unit (18), which cordless cutout screwdriver (10) terminates a screw driving operation when a predetermined torque is achieved.

The new method comprises detecting and evaluating data relating to the operation using the evaluation circuit (18), including current consumption and/or

voltage drop during the screw driving operation, and transmitting the data to an external monitoring unit (20), evaluating the data received by the external monitoring unit (20), including comparing the data with stored predetermined limit values and generating and sending a signal to the output screwdriver (10) that causes the supply of current thereto to be interrupted in a case wherein the predetermined limit values are not met and deactivating the cutout screwdriver (10) when a number of idle screwdriver actuations exceeds a predetermined limit value per screw driving cycle.

Support for new claim 17 is found in claims 1, 2, 8 and 9 and in Fig. 1.

None of Majic or Totsu, whether taken alone or in combination with Setton or Bitzer, teach or suggest the limitations of new claims 16 and 17.

The application as amended is believed to be in condition for allowance. Action to this end is courteously solicited. However, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Michael J. Striker', with a long, sweeping horizontal stroke extending to the right.

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